

Notice of Allowability	Application No.	Applicant(s)	
	10/726,858	WALKER, PAUL	
	Examiner	Art Unit	
	Herng-der Day	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendments received 4/16/07 and 6/29/07.
2. ☒ The allowed claim(s) is/are 1, 3-11, 13-21, and 23-30, now renumbered as 1-27.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20070706</u>. 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|--|



**KAMINI SHAH
SUPERVISORY PATENT EXAMINER**

DETAILED ACTION

1. This communication is in response to Applicant's Amendment to Office Action dated January 16, 2007, filed April 16, 2007 and Applicant's Supplemental Amendment filed June 29, 2007.

1-1. Claims 1, 3, 5, 10, 11, 13, 15, 20, 21, and 23-30 have been amended. Claims 2, 12, and 22 have been canceled. Claims 1, 3-11, 13-21, and 23-30 are pending.

1-2. Claims 1, 3-11, 13-21, and 23-30 have been examined and allowed.

Reasons for Allowance

2. The following is an Examiner's statement of reasons for allowance:

2-1. The closest prior art of record discloses:

(1) SH4 microprocessor emulates double-precision format instructions with single-precision and integer-execution hardware (Arakawa et al., "SH4 RISC Multimedia Microprocessor").

(2) A floating point arithmetic unit having logic for quad precision arithmetic operations using double-extended hardware (Markstein et al., U.S. Patent 5,631,859).

(3) A single-precision floating-point register array for a floating-point execution unit that performs double-precision operations by emulation (Kahle et al., U.S. Patent 5,732,005).

2-2. Independent claim 1 is directed at a method of performing high precision emulation of program code instructions for a subject machine on a target machine including floating point hardware and integer hardware. Although emulating higher precision instructions using a lower

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precision hardware is obvious as disclosed by the prior art, this amended independent claim identifies the distinct feature in performing high precision emulation of program code instructions, i.e., “wherein at each stage, the intermediate values are tested to determine whether the intermediate values have reached a point at which the hardware of the target machine has enough precision to finish the calculation without loss of accuracy, such that when it is determined based upon the intermediate calculations that the floating point hardware of the target machine provides sufficient precision to finish the calculations required by the instructions without loss of accuracy, the floating point hardware on the target machine is utilized to finish the calculations; and the integer hardware on the target machine is utilized to perform calculations not selected to be performed by the floating point hardware” as shown in Fig. 2, which has not been uncovered in a single teaching, nor would a modification of prior art references be obvious to one of ordinary skill in the art to yield this limitation in the context of the claim. Claim 1 is deemed allowable.

2-3. Independent claim 11 is a computer-readable storage medium claim reciting equivalent method limitations as in the allowable claim 1 and is deemed allowable for the same reason as claim 1.

2-4. Independent claim 21 is a system claim reciting equivalent method limitations as in the allowable claim 1 and is deemed allowable for the same reason as claim 1.

2-5. Dependent claims 3-10, 13-20, and 23-30 are allowed as they depend upon allowable independent claim.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

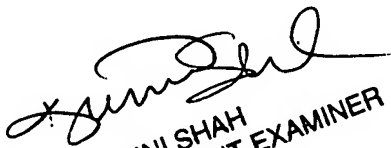
Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
July 6, 2007

H.D.


KAMINI SHAH
SUPERVISORY PATENT EXAMINER